extreme southern Illinois, where they exceeded 80°, whence they decreased eastward to less than 50° in extreme western New York, thence increased to more than 70° in northeastern New York and northwestern New England, and thence decreased to 40° over extreme southeastern Massachusetts and eastern Maine. From the upper Mississippi and middle Missouri valleys the monthly ranges decreased southeastward to less than 40° over extreme southern Florida and extreme southern Louisiana, southward to less than 60° along the southern portion of the west Gulf coast, southwestward to less than 40° on the extreme south Pacific coast, and westward to less than 30° on the middle and north Pacific coasts.

The following are some of the extreme monthly ranges:

Greatest.		Least.	
	°		°
Cairo, Ill	85.0	Tatoosh Island, Wash	20.0
Fort Sully, S. Dak	81.0	Point Reyes Light, Cal	26.0
Pueblo, Colo	78.0	Port Eads, La	31.0
Northfield, Vt	72.0	San Diego, Cal	33.0
Sault de Ste. Marie, Mich	71.0	Key West, Fla	34.0
Taylors Ranch, Utah	70.0	Eastport, Me	36.0

The following is a summary of reports of damaging frost made by regular and voluntary observers of the Signal Service: On the 1st great damage was caused to fruit and vegetables in the country about Shreveport, La., and Corpus Christi, Tex. On the 2d frost destroyed all kinds of growing crops about Knoxville, Tenn.; at Amité City, Houma, and Grand Coteau, La., the freeze and frost of the first part of the month killed tender vegetables and injured fruit trees; in Alabama the freeze of the 2d and 3d did considerable damage to tender buds, and at Montgomery ice formed one-eighth of an inch thick; a report from Jacksonville, Fla., states that the severe frost of the 2d and 3d badly damaged fruit and vegetables in different sections of the state. On the 2d, 3d, and 6th, heavy frost severely injured vegetation at University, Miss.; the low temperature of the first few days of the month was very destructive to fruit buds, etc., in Kentucky; at Homeland, Fla., the freeze of the 3d injured orange blossoms; at Jupiter, Fla., the heavy frost of the 4th did much damage to vegetation; and at Spartanburgh, S. C., the frost of the 3d killed peach blooms, flowers, and vegetables; heavy frost on 3d, 9th, and 16th caused great damage to tender vegetation in the country around Savannah, Ga. On the 12th killing frost destroyed much fruit in the valley of the Gila River, Ariz. The freezing weather of the 15th and 16th materially damaged all fruit in the vicinity of Springfield, Mo. On the 16th killing frost was reported at Mobile, Ala., and Titusville, Fla.; and light frost occurred at Pensacola, Cedar Keys, and Jupiter, Fla.; at the latter-named stations the frost was nearly two weeks later than any previous record of frost; on this date early vegetation around Charleston, S. C., was greatly damaged by frost, and at Wilmington, N. C., ice formed four inches in thickness, and tender vegetation was killed. On the 17th thousands of young orange trees were reported killed by freezing weather at Homeland, Fla.; at Jupiter and Manatee, Fla., heavy frost did much damage to vegetation; and considerable damage was caused to the fruit and vegetable crops in other sections of Florida.

The dates of killing frost in the Gulf States in the first part of the month about corresponded with the average dates of last killing frost in that region, while the killing frosts of the middle of the month were four to six weeks later than usual in Florida; about one to two weeks later than usual in the southern parts of the east Gulf states; and about seasonable in North and South Carolina. The average date of last killing frost in central Florida is February 1st, and the records of this office give the northern part of Lee Co., Fla., where frost was reported on the 3d, 4th, and 17th of the current month, as the extreme southern limit of frost ever reported for any month.

The southern limit of frost in the Atlantic coast states for the current month was about seven degrees farther south than in February, 1890, and extended southward to Lee Co., Fla.; in the eastern part of the east Gulf states the southern limit was about three degrees farther south than for the preceding month, while to the westward of the Mississippi River and on the Pacific coast frost was reported to the southern borders of the country for both the current and the preceding month.

In the south Atlantic and Gulf states frost was reported most frequently in North Carolina, where it was noted for twenty-five dates; in Georgia and South Carolina for sixteen dates; in Alabama, Arkansas, and Mississippi for thirteen dates; in Louisiana and Texas for ten dates; and in Florida for six dates. On the Pacific coast frost was noted in Oregon for twenty-one dates; in Washington for fourteen dates; in northern California for twenty-three dates; and in southern California for ten dates. On the 19th, 25th, 26th, and 27th no frost was reported in the south Atlantic and Gulf states.

In the south Atlantic and Gulf states frost was reported in nine states on the 2d, 3d, 4th, and 16th; in eight states on the 1st and 15th; in seven states on the 6th and 7th; in six states on the 29th; and in from one to five states, inclusive, on the 5th, 6th to 14th, 17th, 18th, 20th to 24th, 28th, 30th, and 31st. In northern California frost was reported on the 1st to 15th, 19th, 21st, 23d, 24th, 26th, 27th, 28th, and 31st; in southern California on the 10th to 15th, 20th, 21st, 26th, and 31st; in Oregon on the 1st, 3d, 6th to 14th, 18th, 19th, 20th, 23d, 24th, 25th, 27th, 28th, 30th, and 31st; and in Washington on the 1st, 5th, 6th, 8th to 12th, 14th, 17th, 19th, 21st, 30th, and 31st.

TEMPERATURE OF WATER.

The following table shows the maximum, minimum, and mean water temperature as observed at the harbors of the several stations; the monthly range of water temperature; and the mean temperature of the air for March, 1890:

Stations.	Temperature at bottom.				Mean temperature of air at the station.
	Max.	Min.	Range.	Monthly mean.	
	°	°	°	°	°
Boston, Mass	43.4	34.8	8.6	37.7	34.9
Canby, Fort, Wash	48.0	40.5	7.5	44.7	44.0
Cedar Keys, Fla	75.0	39.8	35.2	60.1	60.1
Charleston, S. C	63.2	52.6	10.6	58.5	56.4
Eastport, Me	37.2	34.9	2.3	35.9	29.4
Galveston, Tex	71.0	49.5	21.5	62.9	62.1
Key West, Fla	81.5	64.7	16.8	73.5	70.6
Portland, Oregon	46.9	36.4	10.5	43.5	45.2

PRECIPITATION (expressed in inches and hundredths).

The distribution of precipitation over the United States and Canada for March, 1890, as determined from the reports of nearly 2,000 stations, is exhibited on chart iii. In the table of miscellaneous meteorological data the total precipitation and the departure from the normal are given for each Signal Service station. The figures opposite the names of the geographical districts in the columns for precipitation and departure from the normal show, respectively, the averages for the several districts. The normal for any district may be found by adding the departure to the current mean when the precipitation is below the normal and subtracting when above.

The heaviest monthly precipitation reported for March, 1890, was 19.83, at Sims, Shasta Co., Cal. The monthly precipitation amounted to 17.83 at Upper Mattole, Cal.; to 17.58 at South Fork, Ky.; to 16.70 at Marengo, Ind.; to 16.50 at Delta, Cal., and a depth of 14.20 was reported at Oak Ridge, Mo. On the central coast of Massachusetts, in eastern and south-central Kentucky, north-central Tennessee, southwest-

ern Indiana, central Arkansas, southwestern Mississippi, in eastern California between the thirty-eighth and thirty-ninth parallels, and on the Pacific coast between the thirty-eighth and forty-third parallels, and within a limited area south of San Francisco the monthly precipitation exceeded ten inches. In southeastern California and the adjoining part of Arizona, in southeastern Arizona, southwestern and southeastern New Mexico, a great part of southwestern Texas, within an area extending from the central part of the Panhandle of Texas northward over western Kansas, and in north-central Kansas no precipitation was reported; and at stations in east-central Florida, west-central Illinois, southwestern Iowa, northeastern lower Michigan, western Minnesota, west-central Missouri, central North and South Dakota, southwestern Nebraska, southeastern Colorado, western Indian Territory, northern Montana, northern Utah, central and southern Wyoming, southern and southwestern Nevada, and northeastern Oregon less than one-half inch of precipitation was reported.

The precipitation was generally in excess of the average for the month along the Atlantic coast from the Gulf of Saint Lawrence to Maryland, and thence southwestward over the Ohio Valley, western Tennessee, Arkansas, northeastern Texas, at Galveston, Tex., northern Alabama and Mississippi, a greater part of Missouri, along the Mississippi River south of Davenport, Iowa, in the central upper lake region, at stations on the south shore of Lake Erie, on the northeastern slope of the Rocky Mountains, generally in the middle and northern plateau regions, and along the middle and north Pacific coasts. The monthly precipitation was also above the normal at Key West, Fla. Elsewhere the precipitation was deficient. The greatest departures above the average precipitation occurred in the central Ohio valley, where they exceeded 5.00; in south-central Nova Scotia, southeastern Massachusetts, and from north-central Kentucky southwestward over western Tennessee they were more than 4.00, and in northern California more than 3.00 in excess of the normal. The greatest departures below the average precipitation were noted in southwestern Alabama, where they exceeded 5.00; the deficiencies exceeded 4.00 over a considerable area in the southern parts of the east Gulf states, and on the coast of northern North Carolina. Considered by districts the average percentages of the normal precipitation in districts where the precipitation was in excess were about as follows: northern plateau region, 215 per cent.; New England, 162 per cent.; middle Pacific coast, 157 per cent.; middle plateau region, 142 per cent.; Ohio Valley and Tennessee, 139 per cent.; west Gulf states, 124 per cent.; upper Mississippi valley, 111 per cent.; middle Atlantic states, 109 per cent.; northeastern slope of the Rocky Mountains and north Pacific coast, 106 per cent. In districts where the monthly precipitation was deficient the percentages of the normal were about as follows: middle-eastern slope of the Rocky Mountains, 12 per cent.; Rio Grande Valley, 13 per cent.; southeastern slope of the Rocky Mountains, 18 per cent.; south Pacific coast, 25 per cent.; east Gulf states, 47 per cent.; southern plateau region and south Atlantic states, 50 per cent.; Florida Peninsula, 71 per cent.; extreme northwest, 87 per cent.; Missouri Valley, 90 per cent.; lower lake region, 92 per cent.; upper lake region, 93 per cent. In the northern plateau region more than double the usual amount of precipitation was reported, and in New England, the Ohio Valley and Tennessee, the middle plateau region, and the middle Pacific coast the precipitation was about one-half greater than the average. In the Rio Grande Valley and over the middle-eastern slope of the Rocky Mountains about one-eighth of the usual amount of precipitation fell, over the southeastern slope of the Rocky Mountains and on the south Pacific coast about one-fourth, and in the south Atlantic and east Gulf states and the southern plateau region about one-half the average precipitation for March was reported.

For the period January to March, 1890, inclusive, the greatest excesses in precipitation have occurred in the Ohio Valley and Tennessee and on the middle Pacific coast, where the precipitation has been about fifty per cent. in excess of the usual amount, and the most marked deficiencies have been noted for the south Atlantic and east Gulf states, the Florida Peninsula, and the Rio Grande Valley, where but about fifty per cent. of the usual amount of precipitation for the period named has been reported.

The table of miscellaneous meteorological data for regular stations of the Signal Service and the table of deviations from normal precipitation for certain stations, as reported by voluntary stations, shows that at the following-named places the precipitation for the current month was the heaviest ever measured for March during the respective periods of observation: Manchester, N. H.; Somerset, Nantucket, Newburyport, and Vineyard Haven, Mass.; Narragansett Pier, R. I.; Moorestown, N. J.; Cumberland, Md.; Titusville, Fla.; Fort Smith and Lead Hill, Ark.; Brownsville, Tex.; Milan, Tenn.; Lexington and Louisville, Ky.; Vevay, Ind.; Cincinnati and Columbus, Ohio; Valentine, Nebr.; Winnemucca, Nev.; Boisé City, Idaho; and Walla Walla, Wash. At Auburn and Mobile, Ala.; Topeka and Concordia, Kans.; Crete, Nebr.; Fort Supply, Ind. T.; Fort Stanton, N. Mex.; El Paso, Tex.; and Fresno, Cal., the precipitation was the least reported for March during the respective periods of observation.

In March of preceding years the heaviest precipitation was generally noted in Virginia in 1884; in Florida in 1889; on the northeastern slope of the Rocky Mountains in 1888; over the southern plateau region in 1884; and along the middle and south Pacific coasts in 1884 and 1889; elsewhere the periods of occurrence of greatest precipitation for March were irregular. The least amount of precipitation for March was generally reported in New England in 1885 or 1889; in the south Atlantic states and the southern plateau region in 1887; in the Ohio Valley and Tennessee in 1885 or 1889; in the upper Mississippi valley in 1885; over the middle plateau region in 1887 or 1888; and on the north Pacific coast in 1884 or 1885; elsewhere the periods of occurrence of least precipitation for March were irregular.

DEVIATIONS FROM AVERAGE PRECIPITATION.

The following table shows for certain stations, as reported by voluntary observers, (1) the average precipitation for March for a series of years; (2) the length of record during which the observations have been taken and from which the average has been computed; (3) the total precipitation for March, 1890; (4) the departure of the current month from the average; (5) and the extreme monthly precipitation for March during the period of observation and the years of occurrence:

State and station.	County.	(1) Average for the month of March.	(2) Length of record.	(3) Total for March, 1890.	(4) Departure from average.	(5) Extreme monthly precipitation for March.			
						Greatest.		Least.	
						Am't.	Year.	Am't.	Year.
Arkansas.		*Inches.*	*Years*	*Inches*	*Inches.*	*Inches*		*Inches.*	
Lead Hill	Boone	3.73	8	6.78	+3.05	6.78	1890	2.84	1887
California.									
Sacramento	Sacramento	2.98	40	3.73	+0.75	10.00	1850	0.09	1885
Connecticut.									
Middletown	Middlesex	4.57	28	7.45	+2.88	9.49	1876	1.12	1874
Florida.									
Merritt's Island	Brevard	2.76	12	1.03	−1.73	7.92	1878	0.76	1882
Georgia.									
Forsyth	Monroe	7.20	16	2.66	−4.54	12.87	1875	1.37	1878
Illinois.									
Peoria	Peoria	2.54	35	2.73	+0.19	5.82	1859	0.24	1885
Riley	McHenry	2.64	39	2.14	−0.50	7.23	1876	0.29	1885
Indiana.									
Logansport	Cass	3.03	15	4.85	+1.82	6.89	1861	0.95	1856
Vevay	Switzerland	3.77	25	7.84	+4.07	7.84	1890	0.85	1889
Iowa.									
Cresco	Howard	1.82	17	1.06	−0.76	4.55	1888	0.22	1889
Monticello	Jones	2.52	35	1.86	−0.66	6.54	1877	0.07	1869
Logan	Harrison	2.06	22	3.52	+1.46	4.50	1876	0.30	1885
Kansas.									
Lawrence	Douglas	2.29	22	1.02	−1.27	5.47	1888	0.37	1879
Wellington	Sumner	1.40	11	0.38	−1.02	2.97	1889	0.00	1879
Louisiana.									
Grand Coteau	St. Landry	5.60	7	3.40	−2.20	10.20	1884	2.28	1887

Deviations from average precipitation—Continued.

State and station.	County.	(1) Average for the month of March.	(2) Length of record.	(3) Total for March, 1890.	(4) Departure from average.	(5) Extreme monthly precipitation for March.			
						Greatest.		Least.	
						Am't.	Year.	Am't.	Year.
Maine.		*Inches*	*Years*	*Inches*	*Inches.*	*Inches*		*Inches.*	
Gardiner	Kennebec	3.93	50	4.52	+0.59	10.06	1859	0.90	1856
Maryland.									
Cumberland	Allegany	2.75	18	5.18	+2.43	5.18	1890	0.50	1872
Massachusetts.									
Amherst	Hampshire	3.42	54	5.25	+1.83	7.14	1876	0.89	1858
Newburyport	Essex	3.96	10	6.89	+2.98	6.94	1890	0.96	1885
Somerset	Bristol	4.71	17	9.61	+4.90	9.61	1890	1.14	1885
Michigan.									
Kalamazoo	Kalamazoo	2.52	14	1.96	−0.56	7.33	1877	0.42	1883
Thornville	Lapeer	2.42	13	1.94	−0.48	4.67	1877	0.71	1889
Minnesota.									
Minneapolis	Hennepin	1.83	24	1.69	−0.14	9.00	1868	0.32	1883
Montana.									
Fort Shaw	Lewis&Clarke	0.45	19	0.48	+0.03	1.05	1883	0.04	1873
New Hampshire.									
Hanover	Grafton	2.33	50	3.24	+0.91	5.25	1888	0.25	1866
New Jersey.									
Moorestown	Burlington	3.49	26	6.09	+2.51	6.09	1890	1.08	1885
South Orange	Essex	3.70	18	6.71	+3.01	8.20	1888	0.81	1885
New York.									
Cooperstown	Otsego	2.85	36	4.17	+1.32	5.29	1871	0.55	1885
Palermo	Oswego	2.88	36	1.49	−1.39	7.00	1859	0.68	1885
North Carolina.									
Lenoir	Caldwell	4.06	18	3.30	−0.76	10.20	1875	0.50	1879
Ohio.									
N. Lewisburgh	Champaign	3.06	14	4.90	+1.84	5.90	1888	0.75	1889
Wauseon	Fulton	2.77	18	3.45	+0.68	6.52	1876	0.62	1885
Oregon.									
Albany	Linn	4.28	12	6.86	+2.58	11.71	1866	0.81	1885
Eola	Polk	4.84	21	4.26	−0.58	10.66	1879	0.55	1885
Pennsylvania.									
Dyberry	Wayne	2.93	23	5.80	+2.07	5.80	1890	1.03	1885
Grampian Hills	Clearfield	3.89	19	5.29	+1.49	6.89	1875	1.34	1885
Wellsborough	Tioga	5.07	10	6.03	+0.96	10.08	1884	0.66	1887
South Carolina.									
Statesburgh	Sumter	3.84	9	3.53	−0.31	5.90	1888	0.97	1887
Tennessee.									
Austin	Wilson	5.45	19	9.56	+4.11	12.59	1875	1.93	1861
Milan	Gibson	4.02	7	8.41	+4.39	8.41	1890	1.94	1885
Texas.									
New Ulm	Austin	4.87	17	2.07	−2.80	13.13	1883	1.27	1887
Vermont.									
Strafford	Orange	3.68	17	3.70	+0.02	4.10	1876	1.55	1878
Virginia.									
Birdsnest	Northampton	4.94	21	3.65	−1.29	8.75	1884	1.70	1873
Wisconsin.									
Madison	Dane	2.64	22	2.38	−0.26	7.00	1869	0.32	1883
Washington.									
Fort Townsend	Jefferson	1.85	14	2.17	+0.32	4.32	1876	0.11	1884

EXCESSIVE PRECIPITATION.

The table of excessive precipitation shows that monthly precipitation to equal, or exceed, ten inches was reported at sixteen stations in California; at seven stations in Indiana; at four stations in Kentucky; at two stations in Oregon; and at one station each in Alabama, Massachusetts, Missouri, and Tennessee. Among the heavier monthly rainfalls reported were: 19.83, at Sims, Cal.; 17.83, at Upper Mattole, Cal.; 17.58, at South Fork, Ky.; and 16.70, at Marengo, Ind.

In March of preceding years precipitation to equal, or exceed, ten inches has been reported in Alabama and California for fourteen years; in Georgia and Oregon for thirteen years; in Florida and Washington for twelve years; in Louisiana, Mississippi, New York, North Carolina, South Carolina, Tennessee, Texas, and Virginia for from five to ten years, inclusive; and in Arizona, Arkansas, Connecticut, Delaware, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Missouri, Nebraska, New Hampshire, New Jersey, Ohio, Pennsylvania, Rhode Island, Utah, West Virginia, and Wisconsin, for from one to four years, inclusive. In states and territories other than those named precipitation to equal, or exceed, ten inches has not been reported for March of preceding years. The following are among the heavier rainfalls reported for March of preceding years: Carlowville, Ala., 20.50, 1875; Fort Gaston, Cal., 34.52, in 1866; Summit, Cal., 21.05; Alta, Cal., 24.30, and Emigrant Gap, Cal., 21.69, in 1879; Cisco, Cal, 25.30, in 1882; Emigrant Gap, Cal., 22.12, in 1874; Bellevue, Nebr., 20.00, in 1882; Astoria, Oregon, 21.32, and Block House, Oregon, 22.57, in 1859; Fort Stevens, Oregon, 20.76, in 1873; Terrell, Tex., 20.12, in 1875; United States Naval Hospital, near Portsmouth, Va., 26.15, in 1867; and Neah Bay, Wash., 23.83, in 1879. Exclusive of the years and instances cited precipitation to equal, or exceed, fifteen inches in March has been reported for six years in Washington; for four years in Oregon; for three years in California; for two years in Alabama, Illinois, and Mississippi; and for one year in Georgia, Nebraska, New Jersey, and New York.

For the current month precipitation to equal, or exceed, 2.50 inches in twenty-four hours was reported at fifteen stations in Louisiana, and on four dates, the 11th, to 14th, inclusive; in Mississippi at thirteen stations, and on five dates, the 11th to 14th, inclusive, and 27th; in California at nine stations, and on six dates, the 4th, 5th, 7th, 17th, 18th, and 20th; in Arkansas at nine stations, and on six dates, the 10th to 12th, 21st, 22d, and 31st; in Missouri at six stations, and on four dates, the 11th, 12th, 26th, and 27th; in Tennessee at six stations, and on three dates, the 12th, 13th, and 22d; in Indiana at five stations, and on four dates, the 10th to 13th; in Kentucky at five stations, and on five dates, the 10th to 13th and 22d; in Texas at three stations, and on three dates, the 12th, 13th, and 21st; in Florida at two stations, on the 25th; in Georgia at one station, on the 7–8th; in Illinois at one station, on the 10–11th; in Massachusetts at one station, on the 23d; in Minnesota at one station, on the 24–25th; in New York at one station, on the 22d; in North Carolina at one station, on the 13–14th; in Ohio at one station, on the 21st–22d; in Oregon at one station, on the 4th; and in Pennsylvania at one station, on the 29th. Among the heavier rainfalls reported for this period were: 8.00, at South Fork, Ky., on the 22d; 5.01, at Thayer, Mo., on the 10–11th; 5.00, at Lake Charles, La., on the 12–13th; 5.00, at Marengo, Ind., on the 12–13th; 5.00, at Conway, Ark., on the 21st; 4.66, at Summit, Miss., on the 14th; 4.61, at Upper Mattole, Cal., on the 20th; 4.20, at Andersonville, Ga., on the 7–8th; 4.12, at Ferndale, Cal., on the 18th; and 4.07, at Lead Hill, Ark., on the 10–11th.

In March of preceding years precipitation to equal or exceed 2.50 inches in twenty-four hours has been reported for fifteen years in Alabama; for thirteen years in Georgia; for eleven years in Florida, Louisiana, and Texas; for from five to ten years, inclusive, in Arkansas, Connecticut, Illinois, Indiana, Kansas, Massachusetts, Mississippi, North Carolina, South Carolina, and Tennessee, and from one to four years, inclusive, in California, Colorado, Dakota, District of Columbia, Iowa, Kentucky, Maryland, Missouri, New Hampshire, New Jersey, New York, Ohio, Oregon, Pennsylvania, Rhode Island, Utah, Virginia, Vermont, Washington, and Wisconsin. In states and territories other than those named, precipitation to equal or exceed 2.50 inches in twenty-four hours has not been reported for March of preceding years. The following are the heavier daily rainfalls noted for March of preceding years: Atlanta, Ga., 7.36, 29th, 1886; Okaloosa, La., 12.65, 9th, 1878. Exclusive of the instances cited, daily rainfalls to equal or exceed five inches in March have been reported for two years in Alabama, Georgia, Kansas, and Texas, and for one year in Florida, North Carolina, Tennessee, and Utah.

For the current month precipitation to equal or exceed one inch in one hour was reported at four stations in Texas, and on four dates, the 10th, 11th, 21st, and 31st; in Florida at two stations, and on two dates, the 24th and 25th; in Georgia at two stations, and on two dates, the 1st and 22d; in Illinois at two stations, and on two dates, the 27th and 28th; in Alabama at one station, on the 22d; in Kentucky at one station, on the 27th; and in South Carolina at one station, on the 28th; in Arkansas at one station, on the 21st. Among the heavier rainfalls reported for this period were: 1.75, in twenty minutes, at Howe, Tex., on the 21st; 1.56, in thirty minutes, at Merkel, Tex., on the 10th; and 1.10, in twenty-three minutes, at Shelbyville, Ky., on the 27th.

In March of preceding years precipitation to equal or exceed one inch in one hour has been reported for seven years in Texas; for five years in Florida and Tennessee; for two years in Georgia and North Carolina; and for one year in Arkansas, Kansas, Louisiana, New York, Pennsylvania, and Virginia.

In states and territories other than those named precipitation to equal or exceed one inch in one hour has not been reported for March of preceding years. The following are some of the heavier rainfalls reported for this period in March: Knoxville, Tenn., 1.08 in fifteen minutes, 12th, 1878; Kingston Springs, Tex., 1.60 in thirty minutes, 25th, 1884; Biscayne, Fla., 4.10 in thirty minutes, 28th, 1874; Terrell, Tex., 4.00 in one hour, 19th, 1876. At Greenville, Tenn., on March 27th, 1885, there was an estimated depth of 2.00 in fifteen minutes.

Table of excessive precipitation, March, 1890.

State and station.	Monthly rainfall 10 inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall of 1 inch or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
Alabama.	*Inches.*	*Inches.*		*Inches*	*h. m.*	
Montgomery				1.35	0 55	22
Arkansas.						
Arkansas City		3.00	12			
Conway	10.46	5.00	21	2.00	1 00	21
Dardanelle		2.90	21			
Forrest City		3.50	31			
Fort Smith		3.16	10-11			
Hot Springs		3.25	10			
Lead Hill		4.07	10-11			
Newport (1)		3.02	22			
Ozone		4.11	10			
California.						
Arcata*	11.94	2.91	3			
Boulder Creek	11.77					
Colfax	14.70					
Crescent City	13.51	2.94	17			
Delta	16.50					
El Dorado	10.04					
Eureka	11.57	2.90	4			
Felton	10.00					
Ferndale	11.23	4.12	18			
Fort Gaston	10.68					
Georgetown	14.70	2.75	5			
Do		2.80	7			
Grass Valley	14.02	2.66	4			
Iowa Hill	14.12	3.14	5			
Do		3.28	7			
Mendocino		2.70	4			
Point Reyes Light		3.30	18			
Shingle Springs	10.48					
Sims	19.83					
Summit	14.00					
Upper Mattole	17.83	3.17	5			
Do		2.67	7			
Do		4.61	20			
Florida.						
Fort Meade		3.40	25			
Jupiter				1.00	1 00	24
Titusville		2.52	25	1.40	1 00	25
Georgia.						
Andersonville		4.20	7-8	2.09	1 00	1
Monticello				1.67	1 10	22
Illinois.						
Centralia				1.33	0 15	28
Golconda		2.94	10-11			
Martinsville				1.10	0 25	27
Indiana.						
Cannelton	10.99					
De Gonia Springs	10.74					
Evansville	10.31	3.36	11			
Huntingburgh	10.84	2.75	10			
Marengo	16.70	5.00	12-13			
Mount Vernon	10.19	3.52	10			
New Providence	11.17					
Princeton		2.75	10			
Kentucky.						
Franklin	10.53					
Louisville		2.51	10-11			
Mount Sterling	10.09	2.70	22			
Qwenton		2.50	22			
Richmond		2.80	22			
Shelbyville	10.60			1.10	0 23	27
South Fork	17.58?	8.00?	22			
Do		2.50?	12-13			
Louisiana.						
Alexandria		4.40	12			
Cheneyville		2.57	13			
Clinton		2.62	13			
Do		2.60	14			
Convent		2.52	13-14			
Coushatta (2)		3.26	11			
Farmerville		3.75	11-12			
Girard		2.60	11-12			
Lake Charles		5.00	12-13			
Marksville		2.50	11			
Maurepas		3.00	13			
Melville		2.55	13			
Monroe		2.67	12			
New Iberia		2.50	13			
Plaquemine		4.30	14			
Vidalia		3.55	11-12			
Massachusetts.						
Dudley		2.60	23			
Plymouth	10.14					
Minnesota.						
Fort Snelling		2.85	24-25			

Table of excessive precipitation—Continued.

State and station.	Monthly rainfall 10 inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall of 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
Mississippi.	*Inches.*	*Inches.*		*Inches*	*h. m.*	
Agricultural College		2.80	12			
Brookhaven		3.02	13			
Canton		2.96	12			
Fayette		2.58	12			
Do		2.85	13			
Greenville		2.80	12			
Lake		2.69	13			
Lamar		4.00	14			
Natchez		3.97	12			
Do		3.27	13			
Palo Alto		2.82	13			
Rienzi		3.60	12			
Summit		4.66	14			
Do		4.20	27			
Vicksburg		2.73	11-12			
Washington		3.49	11-12			
Missouri.						
Centreville		4.40	10-11			
New Haven		2.50	26-27			
Oak Ridge	14.20	4.00	27			
Shelbina		2.50	26			
Springfield		2.85	10-11			
Thayer		5.01	10-11			
New York.						
White Plains		2.58	22			
North Carolina.						
Highlands		3.50	13-14			
Ohio.						
Hanging Rock		3.07	21-22			
Oregon.						
Bandon	11.65	3.08	4			
Ellensburgh*	14.44	2.92	17			
Gardiner	10.12					
Pennsylvania.						
Blooming Grove		2.70	29			
South Carolina.						
Winnsborough				1.14	0 30	28
Tennessee.						
Clarksville	10.29					
Dyersburgh		2.50	22			
Lawrenceburgh		2.59	13			
Lewisburgh		2.98	13			
Lynnville		2.64	12			
Springdale		2.50	22			
Trenton		3.22	22			
Texas.						
College Station				1.87	1 00	11
Columbia		3.40	13			
Forestburgh		3.75	21			
Galveston		2.91	12-13			
Merkel				1.56	0 30	10
Palestine				1.27	1 00	31
Howe				1.75	0 20	21

Received too late for publication in February Review.

California.							
Dunsmuir	16.50						

*Received too late to be considered in general discussion.

MAXIMUM RAINFALLS IN ONE HOUR OR LESS.

The following table is a record of the heaviest rainfalls during March, 1890, for periods of five and ten minutes and one hour, as reported by regular stations of the Signal Service furnished with self-registering gauges:

Station.	Maximum fall in—					
	5 min.	Date.	10 min.	Date.	1 hour.	Date.
	Inch.		*Inch.*		*Inch.*	
Bismarck, N. Dak						
Boston, Mass	0.05	25	0.08	25	0.22	28
Buffalo, N. Y	0.03	21	0.05	21	0.15	21
Cincinnati, Ohio	0.15	27	0.25	27	0.55	27
Chicago, Ill*						
Detroit, Mich.*						
Galveston, Texf						
Jupiter, Fla	0.25	23	0.40	23	1.00	23
Marquette, Mich*						
New York City	0.08	28	0.15	28	0.32	22
New Orleans, La	0.15	25	0.20	25	0.30	25
Norfolk, Va	0.05	22	0.10	22	0.25	22
Savannah, Ga	0.15	22	0.30	22	0.70	22
San Francisco, Cal	0.07	18	0.12	18	0.32	18
Saint Louis, Mo	0.30	27	0.60	27	0.70	27
Washington City	0.03	22	0.05	22	0.20	22

* No record, snow. † Record incomplete.

SNOW (snowfall in inches and tenths.)

The greatest depth of snowfall was reported in Nevada and Placer counties, California, along the line of the Central Pacific Railroad, where, at Summit, a total snowfall of one hundred and forty inches was noted. In the more elevated parts of west-central Colorado more than sixty inches of snow fell; in Manistee county, Michigan, more than fifty inches; in extreme southwestern Maine, southeastern New Hampshire, northeastern Massachusetts, and in Sullivan and Blair counties, Pennsylvania, more than forty inches; in northwestern Connecticut, east-central Nevada, and northeastern Vermont, more than thirty inches; in Lake county, Illinois, extreme southwestern Indiana, west-central Iowa, east-central Missouri, northern New Jersey, central New York, Rhode Island, east-central Ohio, southeastern South Dakota, northeastern Wisconsin, and northwestern Wyoming, more than twenty inches; and in central Arizona, southeastern Idaho, east-central Kentucky, northeastern Minnesota, north-central Nebraska, north-central New Mexico, central North Dakota, eastern Oregon, north-central Virginia, and central and northern West Virginia, more than ten inches. Appreciable snow fell north of a line traced from the Atlantic coast just south of Savannah, Ga., west-northwest to central Arkansas, thence northwest to south-central Kansas, thence southwest to west-central Texas, thence westward to central Arizona, thence northwest to south-central Nevada, thence southward to extreme south-central California, thence west of north to southwestern Oregon, and thence along or near the coast line to the Columbia River, and thence east of north over Washington to the British Possessions. The snowfall for the current month was heavier than for any month during the past winter in parts of New England, Pennsylvania, the Ohio and upper Mississippi valleys, and lower Michigan, and the southern limit of snow was farther south than for the winter months of 1889–1890. At Charleston, S. C., on the morning of the 2d, the snowfall was the heaviest since the establishment of the Signal Service station at that place in 1871; the snowflakes melted as they fell. On the 5th there was a heavy fall of snow in the more elevated regions of north-central New Mexico and south-central Colorado, and during the middle part of the month there were heavy snow blockades on the east side of the divide of the San Juan range of mountains in Colorado, which caused an interruption of traffic on the Rio Grande Railroad. On the 30th and 31st a heavy snow storm prevailed in central and east-central Missouri and the adjoining part of Illinois. At Saint Louis, Mo., ten inches of snow fell, and street car travel and traffic in general was suspended. In the section of Illinois referred to the snowfall varied from ten to over twenty inches, and railroad trains were delayed.

Snowfalls of ten inches or more were reported, as follows, and in states and territories where the maximum depth was below that amount, the station reporting the greatest is given:

Alabama.—Valley Head, trace. *Arizona.*—Whipple Barracks, 19. *Arkansas.*—Winslow, 5.3. *California.*—Summit, 140; Cisco, 87; Emigrant Gap, 68; Truckee, 38; Towles, 30; Boca, 26; Susanville, 14.5; Fort Bidwell, 10.2. *Colorado.*—Breckenridge, 64.5; Red Cliff, 40.2; Fraser, 36.8; Alma, 31.8; Leadville, 26; Ranch, near Como, 14.6; Watervale, 14; Durango, 12; Palmer Lake, 10.5. *Connecticut.*—Falls Village, 30; Lebanon, 27; New London, 26.2; Hartford *a*, 24.8; New Hartford *a*, 24.2; Canton, 23; Middletown, 22; Birmingham, 20; Mansfield and New Britain, 18; New Haven, 17.7; Hartford *b*, 17; Southington, 16.5; New Hartford *b* and West Simsbury, 16; Uncasville, 15; Voluntown, 13.5; Waterbury, 12. *Georgia.*—Diamond, 2.7. *Idaho.*—Soda Springs, 16.5; Era, 12; Kootenai, 10. *Illinois.*—Lake Forest, 23; Jordan's Grove, 20.5; Centralia, 18; Mount Carmel, 17; Flora, 15; McLeansborough, 14.5; Aurora, 13.9; Greenville, 11.2; Winnebago, 10. *Indiana.*—Evansville, 21; Angola, 15.8; Princeton, 15; Mount Vernon, 14.5; Marengo, 13; Huntingburgh, 11.2; Laconia, 10.5; *Iowa.*—Storm Lake, 24.8; Logan, 24; Sioux City, 23.8; Bancroft, 18; West Bend, 16.1; Wesley, 15.5; Carroll, 15.2; Hampton, 15; Larrabee, 13.8; Dubuque, 12; Manson and Vinton, 11.5; Webster, 10.8; Belle Plaine, 10.5; Clarinda, 10.2; Monticello, 10.1; Humboldt, Le Claire, and Sac City, 10. *Kansas*—Seneca, 6. *Kentucky.*—Lexington, 13. *Maine.*—Cornish, 45; Orono, 36; Belfast and Calais, 32; Portland, 28.9; Bar Harbor and Lewiston, 28; Kennebec Arsenal, 24.5; Gardiner, 24; Farmington, 20.4; Fairfield, 17; Eastport, 15.3. *Maryland.*—Cumberland, 9. *Massachusetts.*—Croton, 40; Westborough, 36; Worcester, 34.2; Salem and Wakefield, 34; North Billerica, 33.5; Newburyport, 32; Kendall Green and Roberts Dam, 31; Leominster and South Hingham, 30; Blue Hill and Milton, 29; Fitchburgh *a*, Mansfield, and Manson, 28; Somerset, 27.5; Lawrence, 27; Leicester, 26.2; Andover, Fitchburgh *b*, Framingham, Wood's Holl, Gilbertville, and Winchester, 26; Taunton *a*, 25; Chestnut Hill, 24.8; Fall River and Randolph, 24; Middleborough and Mount Nonotuck, 23; Taunton *b*, 21.5; Boston and Springfield Armory, 20.2; Brewster, 20; Nantucket, 19; Provincetown and Wellesley, 18; Amherst Experimental Station and New Bedford *a*, 17; Cotuit, Ludlow, and Williamstown, 16; Plymouth, 14; New Bedford *b*, 13; Fort Warren, 12.8; Dudley, 12.2; Amherst and Long Plain, 12. *Michigan.*—Bear Lake, 52.5; Buchanan, 24; Benzonia, 23.5; Ivan, 22.5; East Tawas, 22.2; Hart and Weldon Creek, 21.5; Marquette, 20.1; Grand Haven, 20; Caldwell, 19; Roscommon, 17.8; Otsego and Stanton, 17.5; Berlin, 17.4; Manistee and Harrisville, 17.3; Alpena, 17.2; Alma, Bangor, and Lathrop, 17; Fort Brady, 16.4; Evart, 15.3; Atlantic and Crystal Falls, 15; Allegan, 14.4; Fremont, 14.2; Noble, 14; Arbela, 13.8; Branson, 13.5; Albion, 13.2; Cassopolis, Grayling, Parkville, and Rawsonville, 13; Hastings, 12.7; Hartford and Paw Paw, 12.5; Benton Harbor and Amadore, 12; Mottville and Thornville, 11.5; Lansing *a*, 11.2; South Albion, 10.5; Concord and Hudson, 10.6; Saint Johns, 10.5; Port Huron, 10.3; Fitchburgh and Calumet, 10.2; Charlevoix, Hillman, Lansing *b*, May, Mio, and Saint Ignace, 10. *Minnesota.*—Duluth, 10.7. *Missouri.*—Saint Louis, 21; Haven, 17; Jefferson Barracks, 15; Saint Charles *a*, 11; Mexico, 10. *Montana.*—Fort Maginnis, 18.1; Martinsdale, 17.3; Fort Custer, 11.9. *Nebraska.*—Valentine, 19.2; Kennedy, 17.5; Fort Niobrara, 13; Creighton, 12; Oakdale and Tekamah, 10.8; Weston, 10.5; Sargent, 10. *Nevada.*—Ruby Hill, 37; Burner's Ranch, 20.5; Tuscarora, 16.5; Austin, 15.2; Eureka, 13; Belmont, 12.5; Fenelon and Genoa, 10. *New Hampshire.*—Nashua, 42; Berlin Mills, 34; Manchester *a*, 33.3; Newton, 31; Antrim, Concord, Manchester *b*, and Plymouth, 29; Stratford and West Milan, 28; North Conway, 26; East Canterbury, 24.8; Hanover, 24.2; North Sutton, 24; Walpole, 22. *New Jersey.*—Oceanic, 25.5; Hopewell, 23; Beverly, 21.3; Newark *a*, 21; Princeton, 19.5; Union, 19; Newark *b*, 18.7; South Orange, 17; Lambertville, 16.7; Locktown, 16.2; Rancocas, 15.6; Asbury Park and Junction, 15; Madison, 14.7; Gillette and Tenafly, 14; Imlaystown, 13.5; Moorestown, 13. *New Mexico.*—Chama, 14. *New York.*—Brookfield, 28.5; New Lisbon, 27.2; Turin, 26.5; Utica, 24.6; Oxford, 24.2; Perry City, 23.6; Constableville, 23; Wedgwood, 22.6; New York City, 21.3; Potsdam, 21; South Canisteo, 20.8; Number Four, 20.5; Cooperstown, 20; Factoryville, 19.8; Rochester, 19.2; Humphrey and Fort Wadsworth, 18.2; Port Jervis and Sherman, 18; Genoa, 17; Ilion, 16.7; Kingston and Middletown, 16.5; Queensbury, 16.2; Eden and Ogdensburgh, 16; Alfred Centre, 15.8; Boyd's Corners, 15.5; White Plains and Willets Point, 15; Fort Schuyler, 14.8; Fort Columbus, 14.5; Ithaca, 13.9; West Point, 13.7; Setauket, 13; Angelica, 12.5; Middleburgh and Pendleton Centre, 12; Davids Island, 11.5; Honeymead Brook, 11.4; Oswego, 11.3; Keene Valley, 11.2; Ardenia and Albany, 11; Fleming, 10. *North Carolina.*—Hot Springs, 4. *North Dakota.*—Steele, 13.5. *Ohio.*—Jefferson, 21.9; Carrollton, 20.5; New Alexandria, 19.3; Hiram, 17.5; Akron, 16.2; Weymouth, 15; Kent, 13.7; Bangorville, 13.1; Canton, 13; Poland, 12; McConnelsville, 11.8; Wooster, 11.6; Bellevue and Oberlin, 11.2; Marietta, 10.8; Wauseon, 10.3; Garrettsville and Orangeville, 10. *Oregon.*—Siskiyou, 23; Vernonia, 19.4; Joseph, 15.4. *Pennsylvania.*—

Blue Knob, 49; Eagle's Mere, 48.6; Grampian Hills, 33; Salem Corners, 32.8; Somerset, 30.5; Wellsborough, 29.2; Dyberry and Philipsburgh, 26.5; Le Roy and Quakertown, 26; Wilkes Barre, 24; Bethlehem and Lock Haven, 22; Girardville, 20.3; Blooming Grove and Honesdale, 20; Coopersburgh, Greenville, and Indiana, 19.8; Drifton, 19.5; Mauch Chunk, 19; Meadville and Coudersport, 18; Johnstown, 17.9; Rimersburgh, 17.2; Easton and State College, 16.6; Centre Valley and Pottstown, 16.5; Charlesville, Nisbet, and South Easton, 16; Myerstown, 15.1; Meshoppen and Troy, 15; Annville, 14.6; Emporium, 14.2; Hollidaysburgh, 14; Petersburgh, 13.1; Pleasant Mount, 12.8; New Bloomfield, 12.7; Uniontown, 12.6; Lewisburgh, 12.5; Carlisle and Waynesborough, 12; Coatesville, 11.8; Clarion, 11.7; Cannonsburgh and Greensburgh, 11.4; McConnellsburgh and Tuscarora, 11; West Chester, 10.8; New Castle, 10.6; Tipton, 10.1; Lancaster, 10. *Rhode Island.*—Woonsocket, 26; Kingston *a*, Lousdale, and Providence *a*, 22; Providence *b*, 20; Pawtucket, 19; Bristol, 16; Kingston *b*, 13. *South Carolina.*—Columbia, 7. *South Dakota.*—Canton, 23; Oelrichs, 15.5; Spearfish, 15; Parkston, 14.5; Alexandria, 10.8; Kimball, 10.5; Rapid City, 10.6; Yankton, 10. *Tennessee.*—Clarksville, 6.5. *Texas.*—Fort Elliott and Silver Falls, trace. *Utah.*—Levan, 4. *Vermont.*—Lunenburgh, 33.5; Chelsea, 25; Jacksonville, 24; Hartland, 17; Northfield, 16; East Berkshire and Vernon, 13; Cornwall and Weatherfield Centre, 10. *Virginia.*—Dale Enterprise, 12. *Washington.*—Waterville, 6. *West Virginia.*—Seven Pines, 18; Tannery, 17.5; Oceana, 15.9; Ella, 13.5; Glenville, 11. *Wisconsin.*—Summit Lake, 23.2; Medford, 20; Milwaukee, 15.8; Phillips, 14; Horicon, 12; Delavan, 10.8; Embarrass, 10.5; Chippewa Falls, 10.2; Greenwood, Honey Creek, and Waucousta, 10. *Wyoming.*—Camp Sheridan, 28.8; Fort McKinney, 10.

DEPTH OF SNOW ON GROUND AT CLOSE OF MONTH.

Chart iv shows the depth of snow reported on the ground at the close of the month. In western upper Michigan and the adjoining part of Wisconsin, in west-central Colorado, and east-central Nevada there was a depth of thirty inches, or more; in central New Hampshire and Vermont, northwestern lower Michigan, east-central Missouri and the adjoining part of Illinois, and southeastern Idaho more than ten inches; and in north-central and northwestern Iowa, southwestern South Dakota, and south-central Montana, more than five inches. In the Atlantic coast states snow was reported on the ground as far south as southern Virginia; in the central valleys to southern Kentucky, southern Illinois, and central Kansas; in the Rocky Mountain and plateau regions in north-central New Mexico and central Nevada. No reports of snow on the ground at the close of the month have been received from Pacific coast states. Compared with the preceding month the southern limit of snow on the ground at the close of the respective months was about the same, save over the eastern part of the country, where on February 28th no snow was reported in the Atlantic coast states south of New Hampshire and Vermont, save trace in extreme northeastern Pennsylvania.

HAIL.

Descriptions of the more severe hail storms of the month are given under the head of "Local storms." Hail was reported as follows: 1st, Md., N. J., N. Y., N. C., Oregon, Va. 2d, Oregon. 3d, La. 4th, Ark., Ill., Ohio. 5th, Colo., La., N. J. 6th, N. J., Pa. 7th, Nev., Oregon. 8th, Cal., Nev., Oregon. 9th, Cal., Kans., Mo., Nev., Oregon, S. Dak., Wash. 10th, Ill., Ind. T., N. C., Oregon, Wash. 11th, Tex. 13th, Tex. 14th, Ala., N. Y., N. C., Ohio, Pa., Va. 15th, N. C., Va. 17th, Ohio. 18th, Ark., Ill., Ind., Ky., Mo., N. Y. 19th, Cal., Colo., Ohio, Tenn. 20th, Ariz., Ark., Ill., Mo., Ohio, S. C. 21st, Colo., Ga., La., Mont., N. Y., Tenn., Va. 22d, Ga., Ind., Ky., Md., N. Y., N. C., Ohio, Oregon, S. C., Tenn. 23d, Ga., Oregon, Utah. 25th, Cal., Oregon, Pa., Tenn. 26th, Cal., Idaho, Ill., Mo., Nev., Ohio, Oregon, Tenn., Wash. 27th, Ill., Ind., Iowa, Ky., Mich., Mo., N. Y., Ohio, Tenn. 28th, Ill., Mass., Mich., N. J., N. Y., Ohio, Pa. 29th, Cal., Mo., Oregon, Utah. 30th, Ark., Cal., Colo., Kans., Ky., Mo., Nev., N. J. 31st, Kans., La., Mo., N. J., Tex., Utah.

SLEET.

Sleet was reported as follows: 1st, Conn., D. C., N. J., N. Mex., N. C., Wash. 2d, Mont., N. J., S. C. 3d, Wash. 4th, Pa., Wash. 5th, Kans., Mo., Nebr., Pa., Tenn. 6th, Ark., Colo., Conn., Nebr., N. J., N. Y., Tenn., Tex. 7th, Ala., Colo., Ga., Miss., S. C., Tenn. 8th, Cal., W. Va. 9th, Cal., Ill., Iowa, Mo., S. Dak. 10th, Cal., Colo., Ind., Iowa, Ky., N. C., Ohio, Oregon, Tenn., Wash. 11th, Wis. 14th, Ala., Miss., N. C., Ohio, Pa., Tenn. 15th, N. C. 17th, Va. 19th, Minn., Ohio, Pa. 20th, Minn., Ohio, Wis. 21st, Minn., Mont., Ohio, Wis. 22d, Ala., N. Y., N. C., Pa. 23d, Ill., Wis. 24th, Minn., Mont., Ohio, S. Dak., Wis. 25th, Conn., Iowa, Minn., N. Y., Pa., Wis. 26th, Cal., Iowa, Minn., Ohio. 27th, Colo., Ill., Ind., Iowa, Ky., Nebr., Ohio, Pa., W. Va. 28th, Conn., Ill., Mass., Nebr., N. H., N. Y., Ohio, Pa. 29th, Ill., Ky., Mass., N. Y., Ohio. 30th, Kans., Ky., Mo. 31st, Kans., Mo., Pa., Va., W. Va.

WINDS.

The prevailing winds during March, 1890, are shown on chart ii by arrows flying with the wind. In New England, the upper lake region, and the upper Mississippi valley the winds were mostly from the northwest; in the south Atlantic states from south to west; in the west Gulf states from northeast to southeast; in the Rio Grande Valley from the south; in the Ohio valley and Tennessee, the lower lake region, the southern and middle plateau regions, and the middle Pacific coast from southwest to northwest; in the Missouri Valley from north to northwest; over the middle-eastern slope of the Rocky Mountains from north to east; over the northern plateau region and along the north Pacific coast from southeast to southwest; along the south Pacific coast from west to northwest; in the middle Atlantic states from the northwest, except in the southern part, where south to southwest winds prevailed. In Florida, the east Gulf states, the extreme northwest, and over the northeastern and southeastern slopes of the Rocky Mountains the winds were variable.

HIGH WINDS (in miles per hour).

Maximum velocities of fifty miles, or more, per hour were reported at regular stations of the Signal Service as follows: 2d, 54, n., at Block Island, R. I.; 50, n., at Hatteras, N. C. 7th, 68, se., at Fort Canby, Wash. 8th, 54, se., at Fort Canby, Wash.; 60, sw., at Winnemucca, Nev.; 54, n., at Hatteras, N. C. 9th, 50, s., at Moorhead, Minn. 10th, 54, w., at Fort Stanton, N. Mex. 16th, 50, nw., at Hatteras, N. C. 19th, 60, ne., at Block Island, R. I. 23d, 50, s., at Dodge City, Kans. 24th, 53, nw., at Bismarck, N. Dak.; 60, nw., at Fort Buford, N. Dak. 25th, 66, w., at Chicago, Ill.; 50, nw., at Valentine, Nebr.; 54, nw., at Bismarck, N. Dak. 26th, 60, w., at Pueblo, Colo.; 55, w., at Whipple Barracks, (Prescott) Ariz. 27th, 50, s., at Lexington, Ky.; 50, ne., at Milwaukee, Wis.; 58, w., at Cairo, Ill.; 60, nw., at Springfield, Mo.; 54, nw., at Wichita, Kans.; 60, nw., at Fort Sill, Ind. T.; 68, ne., at Chicago, Ill.; 62, n., at Dodge City, Kans.; 60, w., at Saint Louis, Mo. 28th, 57, ne., at Chicago., Ill.; 58, nw., at Saint Louis, Mo.; 62, nw., at Lexington, Ky.

LOCAL STORMS.

On the 11th a tornado passed over the village of Excelsior, Ark., fifteen miles south of Fort Smith, Ark., demolishing